

IN THE CLAIMS:

Amend claims 1-11 as follows:

1. (Currently Amended) An integrated gas sensor having a semiconductor body on which there is arranged a gas-sensitive resistor film (4) contacted by electrodes (5), at least one field electrode (2; 6) being situated under the resistor film and isolated by an insulator film (3), characterized in that the insulator film (3) has a thickness that is at least approximately less than or equal to approximately ~~ten~~10 times the Debye length L_D corresponding to this insulator film (3)

$$L_D = \sqrt{\frac{\epsilon \epsilon_0 k T}{q^2 N}}$$

where

T is the temperature,

ϵ is the relative permittivity of the material,

ϵ_0 is the absolute permittivity,

k is the Boltzmann constant,

N is the charge-carrier concentration and

q is the elementary charge.

2. (Currently Amended) Integrated gas sensor according to Claim 1, characterized in that the insulator film (3) has a thickness that is at least approximately less than or equal to approximately three3 times the Debye length L_D corresponding to this insulator film (3).

3. (Currently Amended) Integrated gas sensor according to Claim 1 ~~or 2~~, characterized in that the insulator film (3) ~~has~~ has a thickness that is at least approximately less than or equal to approximately the Debye length L_D corresponding to this insulator film (3).

4. (Currently Amended) Integrated gas sensor according to ~~one of Claims 1 to 3 or the~~ preamble of Claim 1, characterized in that a plurality of microstructured field electrodes (6) ~~is~~ is provided as field electrode.

5. (Currently Amended) Integrated gas sensor according to Claim 2, characterized in that each of the microstructured field electrodes (6) ~~is~~ is individually drivable.

6. (Currently Amended) Integrated gas sensor according to ~~one of Claims 1 to 3~~, characterized in that one or more heater electrodes are integrated into the semiconductor body.

7. (Currently Amended) Integrated gas sensor according to ~~one of Claims 1 to 4~~, characterized in that driver electronics for the gas sensor ~~is~~ are monolithically integrated into the semiconductor body.

8. (Currently Amended) Integrated gas sensor according to ~~one of Claim 5~~, characterized in that the driver electronics is provided for temperature control.

9.(Currently Amended) Integrated gas sensor according to ~~one of Claims 1 to 5,~~
characterized in that the thickness of the gas-sensitive film (4) is at most approximately one-
hundred ~~100~~ times greater than the Debye length of this gas-sensitive film.

10.(Currently Amended) Integrated gas sensor according to Claim 2, characterized in that
the spacing between the microstructured electrodes (6) is to be made of the order of the grain size
of the gas-sensitive film (4). ~~Here insert dependent claims from page 7 beginning at line 27.~~

11.(Currently Amended) Integrated gas sensor according to ~~one of Claims 1 to 8,~~
characterized in that the insulator film (3) has a high breakdown field strength (Si_3N_4 , Al_2O_3 ,
 SiO_2) and at least to a great extent does not screen electric fields.